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Diagnostic test in British History
prepared and standardized for Alberta.
1927.

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THESIS

Diagnostic Test in British History

Prepared and Standardized

for Alberta

Submitted by

Lucy A. Bagnall

April 1927

1927
#7

This thesis presents the results of an attempt (1) to make an educational test in British History; (2) to standarize the test for the Province of Alberta; (3) to make comparisons of the results of the teaching of history in four different types of school, such results being judged by the score made in the test.

Purpose of the Test.

In the field of educational testing, there has been the greatest activity in public school subjects, in which there is much uniformity of objectives, content, and continuity of treatment. During the last five years, however, many tests in high school subjects have been constructed. American history has received its full share of attention, and there are on the market tests by Gregory, Harlan, Hahn, Barr, and Van Wagenen. Thus far, no tests have been published in Canadian or British history. This test is then one of the earliest efforts in constructing a British history test.



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It is not easy to test for all the desired ends in history teaching, even when there is agreement as to those ends. The informational value of history is uniformly recognized, often over-stressed, and quite capable of being tested. Tests may also be devised to measure intellectual development such as historical ability in judgment, comparison, and organization. But it is more difficult to test the development of the emotional and moral life which history teaching should effect. This test attempts to test only for acquisition of information, and intellectual development along historical lines.

Scope of the test.

At first it was hoped that a Dominion wide test in British history might be made and standardized, but this proved impracticable. An investigation of the curriculum of the nine provinces disclosed the facts that the subject was introduced anywhere from grades nine to twelve, and that the texts varied as widely as Wrong, Mowat, and Green. It was decided therefore to prepare the test according to Mowat's History of Great Britain, which is prescribed for grade ten in

the Province of Alberta, and to standardize it in this province. This narrowed the scope of the work considerably.

Tentative test.

The work was begun three years ago by the writer in collaboration with Mr. J. D. Ferguson, teacher of Senior History in Crescent Heights High School. The test was given to some two hundred students in Crescent Heights and South Calgary High Schools, and the findings presented in essay form before the Department of Educational Psychology in the University of Alberta. At the close of the years' work, Mr. Ferguson wished to discontinue the investigation. With Mr. Ferguson's consent to the use and revision of the test, the writer has carried the work further. Part I was recast and brought into uniformity with Parts II and III in which minor alterations were made. The test was then printed and administered throughout the province. Statistics were compiled, norms established, and conclusions drawn, and the results of this two years' work is herewith presented.

Organization of the test.

The test is organized in the following manner. The period prescribed--from 1485 to the present--is divided into three parts, corresponding roughly to fall, winter, and spring terms: from 1485 to 1763; from 1763 to 1854 ; from 1854 to 1914. It is possible then for the teacher to administer each test as the corresponding period is covered, or to give all three parts in three forty-minute periods at the close of the term. The norms have been established by administering the test at three different times.

Each part contains eight exercises which are designed to test the following historical abilities:

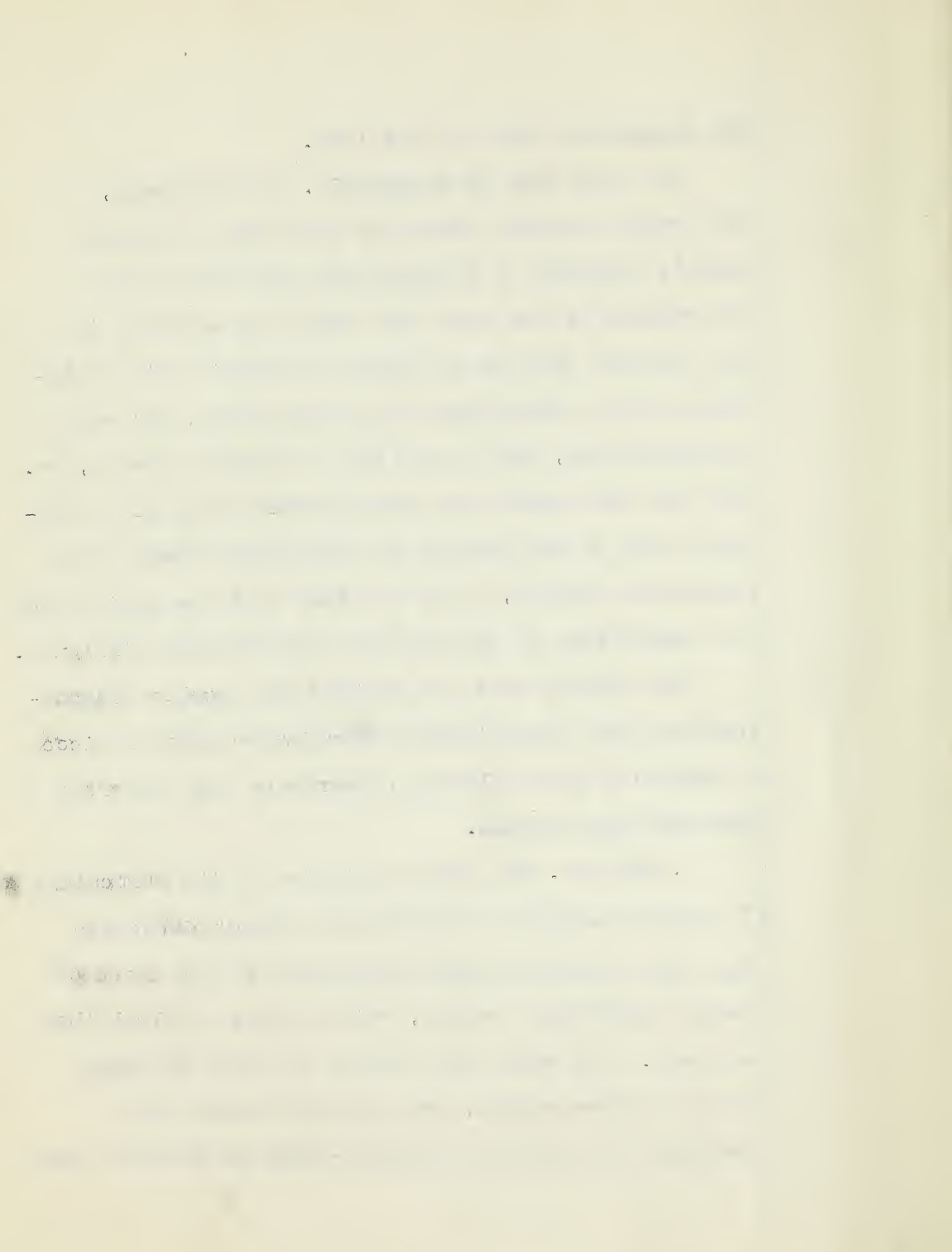
1. Memory for historical facts and time-relations.
2. Ability to perceive cause and result relations.
3. Knowledge of personalities.
4. Use of judgment in true and false exercise.
5. Ability to comprehend the meaning of terms.
6. Ability to see relations between past and present.
7. Ability to select the best reasons in historical comparisons.
8. Ability to organize related events into larger movements.

The Diagnostic Value of the test.

The test then is diagnostic. For instance, the teacher becomes aware not only that a certain pupil's standing is 40 while the provincial norm for schools of the same type (say city schools) is 54; but also that he is strong in grasping time relations and in recognition of personalities, but weak in comparisons, and in ability to organize events, etc. And then the teacher may decide whether the poor showing is due to her neglect to adequately develop that particular ability, or to the fact that the pupil finds the acquisition of that ability particularly difficult.

This thesis does not analyze the results diagnostically--that investigation constitutes another piece of work--but the following comments on the different exercises may be made.

1. Ability. The great variation in the percentage of correct responses in different schools indicates that some teachers attach importance to the dates of really significant events, while others overlook them entirely. Now while the attempt to carry too many dates is labor wasted, yet a certain number are necessary as a mental framework--pegs on which to hang



other events, and a few dates are intrinsically worthwhile.

2. Cause and effect. The training of ability to perceive this relation furnishes the finest mental exercise, and is valuable also in obtaining and retaining an intelligent grasp of historical events. Results show that many pupils have not received or profited by any such training. The result of George I's inability to speak English was the introduction of a sort of mongrel German into England, according to one student's response.

3. Personalities. The recognition of personalities was tested in three ways. In Part I, the student was required to place each personality in the Tudor, Stuart, or Hanoverian period; in Part II, each was tabled as writer, statesman, general admiral, or inventor; in Part III, each was recognized by filling in the name opposite a statement of his work: e.g.

.. was killed at Khartoum
..... wrote the Origin of Species.

4. Judgment in true and false exercise. This brings the student face to face with his own knowledge. There is no clue in the tone or the face of the examiner, or in the form of the question. For example:

The absolute rule of Henry VII was beneficial to England; or, England was justified in entering the War of the Spanish Succession.

5. The ability to comprehend the Meaning of Terms. If a pupil cannot decide correctly whether the Renaissance is a social, a religious, a political, or an intellectual movement; if he decides a Radical is one who thought the constitution could not be improved, it is obvious that he has been allowed to use words without any definite concept back of them.

6. Ability to perceive relations between past and present. This test shows whether the pupil has been led to make his thinking vital and real by making such comparisons. For example:

Labor conditions are better today than in William IV's reign because--

-----1. There is no longer any unemployment.

-----2. Labor is more fairly represented in the government.

-----3. The cost of living is not so high.

-- --4. All the demands of labor have been granted.

7. Ability to select the best reasons in historical comparisons. For example:

Wellington resembled the younger Pitt because--

- 1.Both advocated parliamentary reform
- 2.Both were Prime Ministers during the war
with Napoleon.
- 3.Both were representatives of the Tory party.
- 4.Both served their country in India.

8. Ability to organize related events into larger movements. This is the exercise which always discriminates between the weak and the strong student. It is an attempt, too, to overcome one of the weaknesses of such tests, and gives the student an opportunity to establish associations, combine, group, and organize. The student--and there are some few such--who can correctly organize those thirty-six events, possesses not only knowledge of facts but ability to think.

Securing provincial norms.

An attempt was made to give the teacher of every Grade ten in Alberta a chance to administer the test. A sample test and a letter requesting cooperation were sent to 213 schools. Responses were received

from 113 schools, and the tests were sent out. In some cases, the teacher administered the first one or two parts of the test, but failed to administer or return all three parts. To secure uniformity, responses were considered from those schools only which gave the complete test, except in the rural schools. This meant then that the norms were established from 52 schools, testing 1207 students in Part I, 1098 in Part II, and 1030 in Part III.

The tests were scored by the writer in all of the schools except two, in each of which the teacher had been trained in educational testing, and used the standard scoring key.

Results and Conclusions

I. The provincial norms.

	Cases	Mean	S.D.	P.E. of Mean
Part I.	1207	49	15.62	#.3033
Part II.	1098	54.7	16.33	#.3323
Part III.	1030	48.9	16.55	#.3478
Whole Test	1112(Av.)	51.66	16.3	#.1903

The higher score in Part II may be accounted for in two ways: first, that the exercises in Part II were easier; second, that Part I suffered because of the unfamiliarity of the type of test, and that Part III deals with the most difficult and unfamiliar part of the text. It is the opinion of the writer that both causes were operative.

Tables 5, 10 and 15 present the statistics for the province in Parts I, II, and III respectively, and Table 16 in the complete test.

Graph 1 shows the frequency surface of scores in the complete test made by 3335 cases, that is, 1112 students. Graph I presents a normal distribution. Graph II compares the frequency surfaces of Parts I, II and III throughout the province.

II. Comparison of results in different types of schools.

The most interesting part of the investigation was a comparison of the results obtained in schools of different types. The schools were grouped as follows:

1. City schools as Calgary and Lethbridge in

in which there are large staffs, and in which the history is generally taught by one teacher with special qualifications.

2. Large town schools, such as Claresholm and Macleod, with from three to five teachers on the staff, almost always university graduates.

3. Small town and village schools, as Taber, Nanton and Empress, in which one or two teachers carry the work, and those smaller still in which the Principal teaches grades nine to eleven, and seven and eight in addition. There is here a respectable number of university graduates but the majority hold first class licenses.

4. The Rural or ungraded schools in which grade ten is permitted. As far as it could be ascertained from the inspectors, there were last year 26 such schools. It was difficult to establish communication because of frequent changes of teachers, but the tests were administered and returned complete in 8 schools, with a total of 16 cases. One ungraded school had 5 grade ten pupils. In almost every case the teacher held first or second class license without university degree.

As a result of a questionnaire sent out, it was ascertained how much teaching was provided per week for each grade ten class. The number of minutes per week varied from 45 to 225. In some of the ungraded schools the surprising thing was that so much time was given to history. The average in all schools was about 125 minutes.

The investigation then was in accordance with the following grouping:

1. City, 9 schools, 664 students
2. Large town, 5 schools, 149 students
3. Small town and village, 30 schools, 283 students.
4. Rural, 8 schools, 16 students.

Results and conclusions

Tables 1-15 indicate the results in each part of the test. Table 17 compares the percentage of pupils making each score, in the four types of schools. Table 18 brings the results together.

Graph 3 represents the distribution of the scores in the different schools. Graph 4 shows the mean in both the separate parts and in the combined test, in the different schools.

	City	Large town	Small town and Village	Rural	Total
Cases	1993	446	849	47	3335
Mean	54.01	47.44	46.9	44.74	51.66

These are the norms established for the complete test. The same order holds in each part of the test, as indicated in Table 18, except that in Part I the large towns stand to the smaller towns and villages as 44.7 to 45.5.

Now this is the order we should expect to find. In the larger schools, in general, the teachers are superior in equipment and experience, and have time to teach, not merely to hear recitations. The wonder is rather that there is not a greater difference. Between city school and village school with one teacher for the high school, 7% is a small difference, and the rural school is less than 10% below the city school. One wonders if the restricted nature of the instruction is more than compensated for by the initiative developed in the pupil who is thrown on his own resources.

Mowat, however, though delightful as a history, is a difficult text for the average grade ten student

to handle without considerable assistance. The student lacks the judgment necessary to select what is essential from the great mass of detail. This was the outstanding criticism of Mowat as a text--its prolixity--on the part of dozens of the teachers who expressed themselves on this subject.

There is another obvious conclusion to be drawn from this investigation. The teaching ability of the individual teacher is perhaps the most important factor in determining the result of the year's course in British history. Many a teacher in the smaller school is doing a finer piece of work than the highly equipped teacher in the big school.

This point may be illustrated by a comparison between two city schools, with similar equipment, each handling about one hundred grade ten pupils. The difference is indicated in Graph 5. In school A the mean in the completed test was 58.2; in school B, the mean was 38.1. This difference of twenty per cent is more than twice the difference between the average city school, and the average rural school.

This piece of research work is then presented at this stage. A revision in some few particulars would be made if the test were printed again, for no one can be so well aware of its weaknesses as the writer who has corrected over three thousand copies. An interesting investigation might be made of the diagnostic qualities of the test, and of sex differences in handling the various abilities. But that is not within the scope of the present thesis.

DIAGNOSTIC TEST IN BRITISH HISTORY

Based on Mowat's History of Great Britain

PART I.—1485-1763

Prepared by J. D. Ferguson and L. A. Bagnall

Pupil's Name.....Grade.....Boy or Girl.....

Age: Years..... Months..... Post Office.....

Name of Teacher.....

Name of School.....

Test	METHOD OF SCORING	R.	W.	Possible Score	Actual Score
1	Rights			12	
2	Rights x 2			12	
3	Rights— $\frac{1}{2}$ Wrongs			12	
4	Rights— $\frac{1}{2}$ Wrongs			13	
5	3 (Rights— $\frac{1}{2}$ Wrongs)			9	
6	3 (Rights— $\frac{1}{2}$ Wrongs)			9	
7	3 (Rights— $\frac{1}{2}$ Wrongs)			9	
8	$\frac{1}{2}$ for 1 right, 1 for 2 right, 2 for 3 right			24	
Total				100	

This diagnostic test is designed to ascertain what different historical abilities contribute to the knowledge and appreciation of the more important phases of British History.

The test is arranged in three parts, covering respectively the periods 1485-1763, 1763-1854, 1854-1914. The parts may be given as each section is completed, or the three parts at the close of the term.

This is not a time test, but 45 or 50 minutes should be sufficient.

Test 1—HISTORICAL FACTS AND TIME RELATIONS

(a) Associate one important event with each of the following dates, as per example—

Ex.: 1485, Beginning of Tudor dynasty.

1588.....	1660.....
1620.....	1745.....
1642.....	1756.....

(b) Associate one important act or treaty with each of the following dates—

Ex.: 1707, Act of Union with Scotland.

1628.....	1701.....
1651.....	1713.....
1689.....	1763.....

Score equals number right.

Test 2—CAUSE AND RESULT RELATION

Associate one result with each of the following causes, as per example—

Cause

Result

Ex.: First Jacobite Rising - - - - - Passing of the Septennial Act.

Passing of the Mutiny Act - - - - -

Pope's refusal of a divorce to Henry VIII -

Defeat of the Spanish Armada - - -

Inability of George I. to speak English - -

War with France under Queen Mary - -

Charles I's marriage with Henrietta Maria

Score equals twice number right.

Test 3—PERSONALITIES

Indicate the period to which the following characters belong by using 1 to denote the Tudor period, 2 the Stuart period, 3 the Hanoverian period, as per example.

Ex.: 1 Lady Jane Grey.

2. John Hampden.

3. Admiral Byng.

..... Walpole.

..... Thomas More.

..... Marlborough.

..... Judge Jeffrys.

..... Oliver Cromwell.

..... John Wesley.

..... Pitt, Earl of Chatham.

..... Archbishop Laud.

..... Thomas Wolsey.

..... Francis Drake.

..... Somerset.

..... Gen. Monk.

Score equals number right minus one-half the number wrong.

est 4—JUDGMENT IN TRUE AND FALSE EXERCISE

The following statements are either true or false. Those you know to be true mark with an "X". Those you know to be false mark with an "O", as per example—Ex.: X—Shakespeare was a great dramatic poet.
—Raleigh discovered America.

1. The absolute rule of Henry VII was beneficial to England.
2. Parliament never objected to any policy of Elizabeth.
3. Although Cromwell believed in parliamentary government, he was never able to secure a satisfactory form of it.
4. Charles II's Declaration of Indulgence indicated his belief in religious toleration.
5. Despite his arbitrary rule, the nation believed in the honesty and sincerity of Charles I.
6. England secured Gibraltar during the Seven Years' War.
7. The party system in politics began in the reign of Charles I.
8. Walpole was England's first Prime Minister.
9. England was justified in entering the War of the Spanish Succession.
10. The Instrument of Government restored the House of Lords.
11. The Dutch Wars resulted in the repeal of the Navigation Act.
12. The Bill of Rights settled the religion of the English sovereign.
13. England became expansive and imperial in the reign of Anne.

Score equals the number right minus one-half the number wrong.

Test 5—MEANING OF TERMS

Indicate what you consider the most correct definition of each of the following terms: Dynastic marriage, Renaissance movement, Balance of power; by placing before the first, second, third or fourth definition the sign 1 to indicate your choice.

(a) A Dynastic Marriage is one—

- 1. That has the sanction of the Pope.
- 2. That unites representatives of royal houses.
- 3. That has been approved by Parliament.
- 4. That unites persons holding different religious beliefs.

(b) The Renaissance Movement was—

- 1. A social movement.
- 2. A political movement.
- 3. An intellectual movement.
- 4. A religious movement.

(c) The principle of the Balance of Power means—

- 1. The proper distribution of power between the Sovereign and Parliament.
- 2. The proper distribution of territory between different countries.
- 3. The proper distribution of the land and naval forces of the same country.
- 4. The proper distribution of authority between church and state.

Score equals three times the difference between the number right and half the number wrong.

Test 6—RELATION BETWEEN PAST AND PRESENT

In each of the following place an X sign before the expression which makes the statement correct, as per example—

Ex.: The Commonwealth form of government failed because—

- 1. It did not have the support of the army.
- 2. Its foreign policy was weak.
- X 3. The people wanted a return to the old form of government.
- 4. There was an increase of religious persecution.

There is a closer relationship between England and Scotland today than in James I's reign—

- 1. Because they have a common sovereign.
- 2. Because they have a common parliament.
- 3. Because they have a common religion.
- 4. Because they have a common language.

The Sovereign exercised more authority in the Tudor period than he does today because—

- 1. Parliament met more frequently.
- 2. The Sovereign personally controlled the policy of the government.
- 3. The people had not secured representation in parliament.
- 4. The Sovereign then had hereditary right to the throne.

There is less religious persecution today than in the Tudor period because—

- 1. There are fewer religious parties.
- 2. There is a greater spirit of religious toleration.
- 3. The king is no longer head of the church.
- 4. There is a close relation between religion and politics.

Score equals three times the difference between the number right and half the number wrong.

Test 7—BEST REASONS IN HISTORICAL COMPARISON

Place an X sign before the reason which you consider best, as per example—

Ex.: The treatment of Walpole when he lost public confidence was different from that of previous statesmen in the fact that—

- 1. He was forced to go into exile.
- 2. He was impeached by parliament.
- 3. He was imprisoned.
- X 4. He was retired on a pension, and made a peer.

The destruction of the monasteries was justified because—

- 1. It was necessary for Henry VIII's policy.
- 2. They had outlived their day of usefulness.
- 3. They were a heavy financial burden on the nation.
- 4. The charge of immorality had been established against them.

Immigrants come to Canada from England today in order to—

- 1. Escape religious persecution.
- 2. Enjoy political freedom.
- 3. Improve their financial condition.
- 4. Establish colonies.

William III realized his lifelong ambition in that—

- 1. His invasion of England was successful.
- 2. His policies were heartily supported by England.
- 3. He succeeded in defeating the aims of Louis XIV.
- 4. He won military glory in the War of the Spanish Succession.

Score equals three times the difference between the number right and one-half the number wrong.

Test 8—ORGANIZING RELATED EVENTS INTO LARGER MOVEMENTS

Associate three expressions on the right with each of those on the left, indicating their relationship by the use of their numbers, as per example—

1, 2, 14

Ex.: Causes of ill-feeling between England and Spain.

Establishment of the Reformation in England.

Causes of Rebellion of 1642.

Work of the Long Parliament.

Expansion of England under the Tudors.

Clarendon Code.

Treaty of Utrecht.

Petition of Rights.

Walpole's Administration.

English success in the Seven Years' War.

Treaty of Paris.

Causes of Revolution of 1688.

Restoration of order by Henry VII.

1. English aid to the revolting Netherlands.
2. Execution of Mary Queen of Scots.
3. Divorce of Henry VIII and Katharine.
4. Founding of Virginia.
5. Five Mile Act.
6. Billetting soldiers in private houses.
7. Unpopular ministers retained by the King.
8. Opposition to England engaging in European Wars.
9. Drake's voyages.
10. England's wise naval policy.
11. Grand remonstrance to the King.
12. Imprisonment without fair trial.
13. Gibraltar retained by England.
14. Piracy of English seamen.
15. Illegal ways of collecting money.
16. Pitts' inspiring leadership.
17. Martial law in time of peace.
18. Appointment of competent officers.
19. Elizabeth's Act of Uniformity.
20. Assiento with Spain.
21. Proposal to check smuggling through Excise Bill.
22. Passing of the Triennial Act.
23. Canada given to Great Britain.
24. Conventicle Act.
25. Wise colonial policy.
26. Religious policy of Charles I and Laud.
27. France and Spain never to have the same ruler.
28. Abolition of the Court of Star Chamber.
29. Attempt to restore Catholicism in England.
30. Marriage with Elizabeth of York.
31. Government control of printing.
32. French military power in India broken.
33. Imprisonment for petitioning the King.
34. King dispensing with the Test Act.
35. Founding of the East India Company.
36. Putting down the Impostors.
37. Florida given to Britain.
38. Checking unruly barons by the Star Chamber.
39. Act of Supremacy.

Score is one-half for one right, one for two right, two for three right.

DIAGNOSTIC TEST IN BRITISH HISTORY

Based on Mowat's History of Great Britain

PART II.—1763-1854

Prepared by J. D. Ferguson and L. A. Bagnall

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Age: Years.....Months.....Post Office.....

Name of Teacher.....

Name of School.....

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4	Rights— $\frac{1}{2}$ Wrongs			12	
5	2 (Rights— $\frac{1}{2}$ Wrongs)			8	
6	3 (Rights— $\frac{1}{2}$ Wrongs)			12	
7	2 (Rights— $\frac{1}{2}$ Wrongs)			8	
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This is not a time test, but 45 or 50 minutes should be sufficient.

Test 1—HISTORICAL FACTS AND TIME RELATIONS

(a) Associate one important event with each of the following dates, as per example—
Ex.: 1588, The Invasion of the Armada.

1776.....	1793.....
1782.....	1805.....
1789.....	1815.....

(b) Associate one important act or treaty with each of the following dates, as per example—
Ex.: 1651, Cromwell's Navigation Act.

1763.....	1828.....
1783.....	1832.....
1801.....	1846.....

Score equals the number right.

Test 2—CAUSE AND RESULT RELATION

Associate with the following events the name of an important person or movement, as per example—

Ex.: The opposition to ship money. . . . John Hampden.

Ex.: The change from the medieval to the modern point of view. . . . Renaissance movement.

- | | | | | |
|---------------------------------------|---|---|---|-------|
| 1. Emancipation of the slaves | - | - | - | |
| 2. Defeat of Fox's India Bill | - | - | - | |
| 3. Necessity for Parliamentary Reform | - | - | - | |
| 4. Improvement in Road-making | - | - | - | |
| 5. Theory of Utility | - | - | - | |
| 6. Disappearance of small land-owners | - | - | - | |

Score equals twice the number right.

Test 3—PERSONALITIES

Indicate the line of activity in which each of these men won distinction, using the following index: W for writers, S for statesmen, G for generals, A for admirals, I for inventors.

Ex.: S, Walpole.

Ex.: G, Marlborough.

Ex.: W, Sir Walter Scott.

..... Nelson.	 Lord Howe.	 Shelley.
..... James Watt.	 Hargreaves.	 Earl Grey.
..... Gibbon.	 Clive.	 Arkwright.
..... Lord North.	 Wordsworth.	 Napoleon.
..... Wolfe.	 Amherst.	 Grattan.
..... Cobden.	 Adam Smith.	 Stephenson.
..... Byron.	 Braddock.	 Burns.
..... O'Connell.	 Duncan.	 Hastings.

Score equals one-half the difference between number right and half number wrong.

Test 4—JUDGMENT IN TRUE AND FALSE EXERCISE

The following statements are either true or false. Those you know to be true mark with an X. Those you know to be false mark with an O, as per example—

Ex.: X Shakespeare was a great dramatic poet. O Raleigh discovered America.

- 1. Daniel O'Connell was a strong supporter of self-government for Ireland.
- 2. Great progress was made in means of transportation in the early nineteenth century.
- 3. The Reform Bill of 1832 gave the widest possible franchise.
- 4. The great middle class exercised much political power in Victoria's reign.
- 5. The persecution of the Irish Catholics following the Revolution of 1688 justified them in rebelling in 1798.
- 6. Napoleon is to be commended for opening the Scheldt to navigation.
- 7. Nelson's last engagement was the Battle of Trafalgar.
- 8. William Pitt did not succeed in his efforts to reform Parliament.
- 9. Lord North was successful in checking George III's policy of personal rule.
- 10. After the Battle of Plassey, no further opposition was made to British supremacy in India.
- 11. Henry Grattan strongly opposed the Union of Great Britain and Ireland.
- 12. Following the conquest of Canada, an important trading company (the Hudson's Bay Company) was formed.

Score equals the number right minus one-half the number wrong.

Test 5—MEANING OF TERMS

Indicate what you consider the most correct definition of each of the following terms: Penal Code, Subsidiary Alliance, Continental System, Radicals; by placing before the first, second, third or fourth definition, the sign X to indicate your choice.

(a) The Penal Code was—

- 1. Restrictions placed upon those who would not conform to the Prayer Book in Charles II's reign.
- 2. Restrictions placed upon the Irish Catholics following the Revolution of 1688.
- 3. Restrictions placed upon the reform agitation of England during the early nineteenth century.
- 4. Restrictions placed by England upon the trade of her American colonies.

(b) The Subsidiary Alliance was—

- 1. A union of European countries to oppose Napoleon.
- 2. A union of the Irish Catholics and Protestants to secure self-government for Ireland.
- 3. A policy adopted by Gov. Wellesley to establish British control in India.
- 4. A union of European countries after 1815 to prevent future wars.

(c) The Continental System was—

- 1. The policy of developing free trade between England and other European countries.
- 2. The means which the countries of Europe adopted to prevent any one of them becoming too powerful.
- 3. The plan for uniting the American colonies in their resistance to the demands of England.
- 4. The method by which Napoleon tried to destroy British commerce.

(d) The Radicals were those—

- 1. Who thought the constitution could not be improved.
- 2. Who opposed the Anti-Corn Law League.
- 3. Who agitated for parliamentary reform. .
- 4. Who tried to check the Industrial Revolution by destroying machinery.

Score equals twice the difference between the number right and half the number wrong.

Test 6—RELATION BETWEEN PAST AND PRESENT

In each of the following place an X sign before the expression which makes the statement correct, as per example—

Ex.: The treatment of Walpole when he lost public confidence was different from that of previous statesmen.

..... 1. Because he was forced to go into exile.

..... 2. Because he was impeached by parliament.

X 3. Because he was made a member of the House of Lords.

..... 4. Because he was imprisoned.

(a) The government of Great Britain is more democratic today than in George III's reign because—

..... 1. Parliament meets oftener.

..... 2. There is a greater extension of the franchise.

..... 3. The Prime Minister now presides at Cabinet meetings.

..... 4. Scotland now has representation in the British House of Commons.

(b) Labor conditions are better today than in William IV's reign because—

..... 1. There is no longer any unemployment.

..... 2. Labor is more fairly represented in the government.

..... 3. The cost of living is not so high.

..... 4. All the demands of labor have been granted.

(c) Lord Grey's government of 1833 resembled Ramsay McDonald's of 1924 because—

..... 1. Neither passed any important reforms.

..... 2. Both were Liberal administrations.

..... 3. Both followed immediately upon an extension of the franchise.

..... 4. Both failed to satisfy all the expectations of the working class.

(d) England is more of a free trade country today than in George III's reign because—

..... 1. There is less need for revenue.

..... 2. England requires fewer imports.

..... 3. Results following the repeal of the Corn Laws justified this policy.

..... 4. The Navigation Laws were repealed.

Score equals three times the difference between the number right and one-half the number wrong.

Test 7—BEST REASONS IN HISTORICAL COMPARISONS

Place an X sign before the reason which you consider best, as per example—

Ex.: The Commonwealth form of government failed because—

..... 1. It did not have the support of the army.

..... 2. Its foreign policy was weak.

X 3. The people wanted a return to the old form of government.

..... 4. There was an increase in religious persecution.

(a) The British failed in the conflict with their American colonies—

..... 1. Because the American forces had superior leaders.

..... 2. Because there was mismanagement at home.

..... 3. Because the Americans had greater resources.

..... 4. Because the Americans were assisted by the Loyalists.

(b) The Union between England and Scotland was more successful than that between Great Britain and Ireland because—

..... 1. Scotland received a larger representation in the Union Parliament.

..... 2. There was less religious difference between the Scots and the English at the time of the Union.

..... 3. They had a common sovereign.

..... 4. A friendly feeling existed between England and Scotland.

(c) The East India Company began to establish political control in India because—

..... 1. This right was given them by Pitts' India Bill.

..... 2. The native princes wished them to take over the collection of the taxes.

..... 3. The break-up of the Moghul Empire endangered their commercial interests.

..... 4. The French had surrendered to them political rights after being defeated in the Battle of Plassey.

(d) Wellington resembled Pitt the Younger because—

..... 1. Both advocated parliamentary reform.

..... 2. Both were Prime Ministers during the wars with Napoleon.

..... 3. Both were representatives of the Tory party.

..... 4. Both served their country in India.

Score equals twice the difference between the number right and one-half the number wrong.

Test 8—ORGANIZING RELATED EVENTS INTO LARGER MOVEMENTS

Associate three expressions on the right with each of those on the left, indicating their relationship by the use of their numbers, as per example:

Ex.: 3, 14, 33.	—The Conquest of Canada.	1. Belgium joined to Holland.
		2. Opening of the Scheldt.
		3. Gen. Braddock's expedition.
	The American Revolution.	4. The Stamp Act.
		5. The Penal Code.
		6. Inventions.
	John Wilkes.	7. The famine in Ireland.
		8. Discontent with the Reform Bill of 1832.
		9. A strong belief in personal rule.
	The Industrial Revolution.	10. Establishment of freedom of elections.
		11. Reduction of the National Debt.
		12. Pocket Boroughs.
	William Pitt, the Younger.	13. Marked by the rise of democracy.
		14. The Expulsion of the Acadians.
		15. English acquisition of Malta.
	George III.	16. Aim of restoring the Tories to power.
		17. The Sliding Scale.
		18. Misgovernment at home.
	The War with Napoleon.	19. Demand for vote by ballot.
		20. Shifting centres of population.
		21. Increased production.
		22. Henry Grattan.
	Ireland in the 18th Century.	23. The liberty of the Press confirmed.
		24. Mutiny of the Navy.
		25. Reduction in customs duty.
	England in the 19th Century	26. Improvement in transportation.
		27. The Battle of the Nile.
		28. Extension of the franchise.
	The Reform Bill of 1832.	29. The rearrangement of Europe.
		30. Richard Cobden.
		31. The growth of towns.
	The Corn Laws.	32. Advance in the control of nature.
		33. The death of Gen. Wolfe.
		34. Belief in getting in direct touch with the people.
	The Chartists.	35. Abolition of general warrants.
		36. Forged signatures to a monster petition.
		37. Attempt to reform the House of Commons.
	The Congress of Vienna.	38. The measure blighted from the start.
		39. The surrender of Yorktown.

Score is one-half for one right, one for two right, two for three right.

DIAGNOSTIC TEST IN BRITISH HISTORY

Based on Mowat's History of Great Britain

PART III.—1854-1914

Prepared by J. D. Ferguson and L. A. Bagnall

Pupil's Name.....Grade.....Boy or Girl.....

Age: Years.....Months.....Post Office.....

Name of Teacher.....

Name of School.....

Test	METHOD OF SCORING	R.	W.	Possible Score	Actual Score
1	Rights			12	
2	Rights			12	
3	$\frac{1}{2}$ Rights			12	
4	Rights— $\frac{1}{2}$ Wrongs			12	
5	2 (Rights— $\frac{1}{2}$ Wrongs)			8	
6	3 (Rights— $\frac{1}{2}$ Wrongs)			12	
7	2 (Rights— $\frac{1}{2}$ Wrongs)			8	
8	$\frac{1}{2}$ for 1 right, 1 for 2 right, 2 for 3 right			24	
Total				100	

This diagnostic test is designed to ascertain what different historical abilities contribute to the knowledge and appreciation of the more important phases of British History.

The test is arranged in three parts, covering respectively the periods 1485-1763, 1763-1854, 1854-1914. The parts may be given as each section is completed, or the three parts at the close of the term.

This is not a time test, but 45 or 50 minutes should be sufficient,

Test 1—HISTORICAL FACTS AND TIME RELATIONS

(a) Associate one important event with each of the following dates, as per example:

Ex.: 1588—The Invasion of the Armada.

1854.....	1902.....
1857.....	1907.....
1885.....	1914.....

(b) Associate one important act or treaty with each of the following dates, as per example:

Ex.: 1651—Cromwell's Navigation Laws.

1856.....	1900.....
1867.....	1903.....
1870.....	1911.....

Score equals the number right.

Test 2—CAUSE AND RESULT RELATION

Associate one important cause with each of the following results, as per example:

Cause

Result

Ex.: Industrial Revolution resulted in the necessity for Parliamentary Reform.

- resulted in the transfer of India to the British Crown.
- resulted in much unemployment in the Lancashire cotton mills.
- resulted in England securing control of the Suez canal.
- resulted in the final annexation of Transvaal and the Orange Free State.
- resulted in the introduction of the Closure into the British Parliament.
- resulted in raising Irish hope of self-government.
- resulted in increased emigration to Australia.
- resulted in England entering the Great War.
- resulted in strained relations between England and the United States during the American Civil War.
- resulted in a split in the Liberal party toward the close of the 19th century.
- resulted in a split in the Conservative party early in the 20th century.
- resulted in the Durham report.

Score equals the number right.

Test 3—PERSONALITIES

Write in the name of the person which makes the statement true, as per example:

x.: Wilberforce worked for the liberation of the slaves.

1. was killed at Khartoum.
2. bought Egypt's shares in the Suez canal.
3. was the leader of the Irish Nationalists.
4. wrote the Origin of Species.
5. was Prime Minister during the Indian Mutiny.
6. recommended to Great Britain a union of the Canadas and Responsible Government.
7. helped to develop three great dominions of the Empire.
8. claimed Australia for Britain.
9. re-established British prestige in Afghanistan.
10. won the territory north of the Transvaal.
11. completed the conquest of the Soudan.
12. refused to recognize the Treaty of San Stefano.
13. established a Medical College at Calcutta.
14. secured the passage of the Second Reform Bill.
15. established a model administration in Egypt.
16. objected strongly to French influence in Morocco.
17. was responsible for the beginning of Imperial Preference.
18. introduced the Old Age Pension.
19. said the Turks should be expelled from Bulgaria, bag and baggage.
20. promoted the formation of the German Empire.
21. was active in establishing the Triple Entente.
22. helped with his military force to unite Italy.
23. introduced the first Home Rule Bill.
24. introduced railways and the telegraph into India.

Score equals one-half the number right.

Test 4—JUDGMENT IN TRUE AND FALSE EXERCISE

The following statements are either true or false. Those you know to be true mark with an X. Those you know to be false mark with an O, as per example:

Ex.: X—Shakespeare was a great dramatic poet.

O—Raleigh discovered America.

- 1. Turkey was the ally of Great Britain during the Crimean War.
- 2. The Second Boer War ended shortly after the death of Victoria.
- 3. The Indian Mutiny was a rebellion of the Hindu peasants against British rule.
- 4. The Second Reform Bill secured the franchise for the agricultural laborers.
- 5. The Australian Commonwealth is a federal union.
- 6. The Conservative party was indifferent to the needs of Ireland.
- 7. The Triple Entente included Britain, France and Russia.
- 8. Previous to 1890 relations between England and Germany were satisfactory.
- 9. Previous to 1914 there had been little friction in foreign relations in Europe.
- 10. The Home Rule Bill broke up the Conservative party.
- 11. The interests of England were sacrificed in the Treaty of Berlin.
- 12. The Parliament Bill of 1911 was passed by the Liberal party.

Score equals the number right minus one-half the number wrong.

Test 5—MEANING OF TERMS

Indicate what you consider the most correct definition of each of the following terms: Eastern Question, Concert of Europe, Holy Alliance, Protectionist Movement—by placing before the first, second, third or fourth definition the sign X to indicate your choice:

a) The Eastern Question was—

- 1. The disputed claims of Great Britain and Russia in Afghanistan.
- 2. The trading concessions demanded of China by Great Britain.
- 3. The relationship that existed between Turkey and Russia.
- 4. The relationship existing among the members of the Balkan League.

b) The Concert of Europe was—

- 1. The understanding among the European states regarding their possessions in Africa.
- 2. The meeting of European states in times of crisis to prevent war.
- 3. The grouping of the leading European powers to form the Triple Alliance and the Triple Entente.
- 4. The agreement of the European powers on the question of disarmament following the late war.

c) The Holy Alliance was—

- 1. An association of Irish Catholics to secure Home Rule.
- 2. An organization formed by those opposed to British rule in India.
- 3. An organization of those opposed to British rule in Egypt.
- 4. An organization of certain European powers to prevent the repetition of such movements as the French Revolution.

d) The Protectionist movement was—

- 1. A scheme to give British colonial producers an advantage over all others.
- 2. A scheme to help pay war expenses.
- 3. A scheme to protect home manufacturers from serious competition.
- 4. A scheme for importing the goods a country is not naturally fitted to produce.

Score equals twice the difference between the number right and half the number wrong.

Test 6—RELATION BETWEEN PAST AND PRESENT

In each of the following place an X sign before the expression which makes the statement correct, as per example—

Ex.: The treatment of Walpole when he lost public confidence was different from that of previous statesmen—

..... 1. Because he was forced to go into exile.

..... 2. Because he was impeached by Parliament.

X 3. Because he was made a member of the House of Lords.

..... 4. Because he was imprisoned.

(a) The Crimean War resembled the recent World War—

..... 1. Because each lasted four years.

..... 2. Because each began in the Balkan states.

..... 3. Because Britain supported Turkey in each.

..... 4. Because the settlement of Turkish affairs was the centre of interest in each.

(b) Ireland today enjoys a larger measure of self-government than in Queen Victoria's reign—

..... 1. Because the Penal Code has been repealed.

..... 2. Because at present no political differences exist.

..... 3. Because Lloyd George's Home Rule Bill gave Ireland local government.

..... 4. Because the number of Irish members of the Imperial Parliament has increased.

(c) There is now a better system of dealing with foreign affairs than there was following the Crimean War—

..... 1. Because wars are not so frequent.

..... 2. Because nations are more considerate of each other's commercial interests.

..... 3. Because most nations now belong to the League of Nations.

..... 4. Because the Concert of Europe meets to discuss international affairs.

(d) The House of Lords has less power today than in Victoria's time—

..... 1. Because it is inclined to support only Conservative administrations.

..... 2. Because its veto power on legislation has been limited.

..... 3. Because its membership has been reduced.

..... 4. Because members no longer hold Cabinet positions.

Score equals three times the difference between the number right and one-half the number wrong.

Test 7—BEST REASONS IN HISTORICAL COMPARISONS

Place an X sign before the reason which you consider best, as per example—

Place an X sign before the reason which you consider best, as per example—

Ex.: The Commonwealth form of government failed because—

- 1. It did not have the support of the army.
- 2. Its foreign policy was weak.
- X 3. The people wanted a return to the old form of government.
- 4. There was an increase in religious persecution.

(a) Australia resembles Canada—

- 1. Because both were secured by conquest.
- 2. Because in both countries Labor has a strong political party.
- 3. Because both were settled entirely by British emigrants.
- 4. Because both have had a political development including representative, responsible and federal types of government.

(b) Cecil Rhodes was an Imperialist because—

- 1. He was keenly interested in education.
- 2. He made a large fortune in the diamond mines.
- 3. He wished to extend British control over all South Africa.
- 4. He left his home for the residence of the Prime Minister of South Africa.

(c) Gladstone resembled Peel because—

- 1. Both were life-long members of the Tory party.
- 2. Both passed land laws for Ireland.
- 3. Both introduced legislation that split their party.
- 4. Both supported Home Rule for Ireland.

(d) The Irish Nationalists embarrassed the British Government because—

- 1. They used the privileges of debate to delay legislation unnecessarily.
- 2. They were all Catholics.
- 3. Members retained their seats for many years.
- 4. They supported Home Rule for Ireland.

Score equals twice the difference between the number right and one-half the number wrong.

Test 8—ORGANIZING RELATED EVENTS INTO LARGER MOVEMENTS

Associate three expressions on the right with each of those on the left, indicating their relationship by the use of their numbers, as per example:

Ex.: 1, 20, 39	The Reform Bill of 1832.	1. Pocket Boroughs.
.....	The Crimean War.	2. The Wyndham Act.
.....	India.	3. The Education Act of 1870.
.....	Gladstone's Administration.	4. The original guaranteeing of Belgian neutrality.
.....	Disraeli's Administration.	5. The charge of the Light Brigade.
.....	Ireland after 1850.	6. The formation of the Triple Entente.
.....	The British Overseas Dominions.	7. The Alabama dispute.
.....	Foreign Relations 1878-1914	8. The siege of Sebastopol.
.....	The World War.	9. Boycotting and Moonlighting.
.....	Palmerston's Administration.	10. "His administration falls naturally into two divisions."
.....	Foreign Relations 1816-1852	11. Opposition to paper annexations in Africa.
.....	Liberal Administration 1906-1914	12. The Old Age Pensions Act.
.....	Salisbury's Administration.	13. Austria's ultimatum to Serbia.
		14. Education brought into line with native requirements.
		15. The peasantry had no sense of justice.
		16. Maori Wars.
		17. The French fleet was centered in the Mediterranean.
		18. Abolition of the Army Purchase system.
		19. Increased interest in hospitals.
		20. Shifting centres of population.
		21. Gave the modern Conservative party a program and made it popular.
		22. German invasion of Belgium.
		23. Acknowledged the independence of Greece.
		24. The clash of French and German interests in Morocco.
		25. Granted independence to the Boers after Majuba Hill.
		26. The termination of the East India Company.
		27. The annexation of Bosnia by Austria.
		28. Established the doctrine of the hinterland.
		29. Reduction of the power of the House of Lords.
		30. England rejoiced at being once more a guiding influence in Europe.
		31. The annexation of native states.
		32. The Selkirk Settlement.
		33. Suppressing popular risings to prevent a repetition of the French Revolution.
		34. Handling the Trent affair.
		35. Establishing a new penal colony.
		36. Lord Haldane's military reforms.
		37. Conservative leadership after 1895.
		38. Conducted the war against China.
		39. The growth of towns.

Score is one-half for one right, one for two right, two for three right.

Table 1.

Test I, City Schools. 715 cases, 9 schools.

Scores	f	d	fd	fd ²
95-99	0			
90-94	4	±8	32	256
85-89	6	±7	42	294
80-84	17	±6	102	612
75-79	22	±5	110	550
70-74	36	±4	144	576
65-69	57	±3	171	513
60-64	80	±2	160	320
55-59	73	±1	<u>73</u>	73
			834	
50-54	90	0	0	0
45-49	91	-1	-91	91
40-44	64	-2	-128	256
35-39	80	-3	-240	720
30-34	44	-4	-176	704
25-29	36	-5	-180	900
20-24	11	-6	-66	396
15-19	3	-7	-21	147
10-14	1	-8	<u>-8</u>	<u>64</u>
			-910	6472

Mean 51.97

P.E. of Mean #.379

Median 51.53

S.D. 15.05

P.E. of S.D. #2.685

M.D. 12.19

TABLE 1. - SUMMARY OF DATA FOR THE 1950-1951 SEASON

STATION	DATE	TIME	WIND	TEMP.
1	10/1	10:00	10	50.0
2	10/1	11:00	12	50.5
3	10/1	12:00	15	51.0
4	10/1	13:00	18	51.5
5	10/1	14:00	20	52.0
6	10/1	15:00	22	52.5
7	10/1	16:00	25	53.0
8	10/1	17:00	28	53.5
9	10/1	18:00	30	54.0
10	10/1	19:00	32	54.5
11	10/1	20:00	35	55.0
12	10/1	21:00	38	55.5
13	10/1	22:00	40	56.0
14	10/1	23:00	42	56.5
15	10/2	00:00	45	57.0
16	10/2	01:00	48	57.5
17	10/2	02:00	50	58.0
18	10/2	03:00	52	58.5
19	10/2	04:00	55	59.0
20	10/2	05:00	58	59.5
21	10/2	06:00	60	60.0
22	10/2	07:00	62	60.5
23	10/2	08:00	65	61.0
24	10/2	09:00	68	61.5
25	10/2	10:00	70	62.0
26	10/2	11:00	72	62.5
27	10/2	12:00	75	63.0
28	10/2	13:00	78	63.5
29	10/2	14:00	80	64.0
30	10/2	15:00	82	64.5
31	10/2	16:00	85	65.0
32	10/2	17:00	88	65.5
33	10/2	18:00	90	66.0
34	10/2	19:00	92	66.5
35	10/2	20:00	95	67.0
36	10/2	21:00	98	67.5
37	10/2	22:00	100	68.0
38	10/2	23:00	102	68.5
39	10/3	00:00	105	69.0
40	10/3	01:00	108	69.5
41	10/3	02:00	110	70.0
42	10/3	03:00	112	70.5
43	10/3	04:00	115	71.0
44	10/3	05:00	118	71.5
45	10/3	06:00	120	72.0
46	10/3	07:00	122	72.5
47	10/3	08:00	125	73.0
48	10/3	09:00	128	73.5
49	10/3	10:00	130	74.0
50	10/3	11:00	132	74.5
51	10/3	12:00	135	75.0
52	10/3	13:00	138	75.5
53	10/3	14:00	140	76.0
54	10/3	15:00	142	76.5
55	10/3	16:00	145	77.0
56	10/3	17:00	148	77.5
57	10/3	18:00	150	78.0
58	10/3	19:00	152	78.5
59	10/3	20:00	155	79.0
60	10/3	21:00	158	79.5
61	10/3	22:00	160	80.0
62	10/3	23:00	162	80.5
63	10/4	00:00	165	81.0
64	10/4	01:00	168	81.5
65	10/4	02:00	170	82.0
66	10/4	03:00	172	82.5
67	10/4	04:00	175	83.0
68	10/4	05:00	178	83.5
69	10/4	06:00	180	84.0
70	10/4	07:00	182	84.5
71	10/4	08:00	185	85.0
72	10/4	09:00	188	85.5
73	10/4	10:00	190	86.0
74	10/4	11:00	192	86.5
75	10/4	12:00	195	87.0
76	10/4	13:00	198	87.5
77	10/4	14:00	200	88.0
78	10/4	15:00	202	88.5
79	10/4	16:00	205	89.0
80	10/4	17:00	208	89.5
81	10/4	18:00	210	90.0
82	10/4	19:00	212	90.5
83	10/4	20:00	215	91.0
84	10/4	21:00	218	91.5
85	10/4	22:00	220	92.0
86	10/4	23:00	222	92.5
87	10/5	00:00	225	93.0
88	10/5	01:00	228	93.5
89	10/5	02:00	230	94.0
90	10/5	03:00	232	94.5
91	10/5	04:00	235	95.0
92	10/5	05:00	238	95.5
93	10/5	06:00	240	96.0
94	10/5	07:00	242	96.5
95	10/5	08:00	245	97.0
96	10/5	09:00	248	97.5
97	10/5	10:00	250	98.0
98	10/5	11:00	252	98.5
99	10/5	12:00	255	99.0
100	10/5	13:00	258	99.5

NOTE: WIND SPEEDS ARE IN MILES PER HOUR; TEMPERATURES ARE IN DEGREES FAHRENHEIT.

ALL DATA WERE OBTAINED FROM THE NATIONAL WEATHER SERVICE, WASHINGTON, D. C.

THIS TABLE WAS PREPARED BY THE NATIONAL WEATHER SERVICE, WASHINGTON, D. C.

Table 2.

Test I, Large town schools. 163 cases, 5 schools.

Scores	f	d	fd	fd ²
80-84	1	7	7	49
75-79	3	6	18	108
70-74	5	5	25	125
65-69	6	4	24	96
60-64	8	3	24	72
55-59	19	2	38	76
50-54	19	1	~~155~~ 19	19
45-49	23	0	0	
40-44	14	-1	- 14	14
35-39	15	-2	- 30	60
30-34	16	-3	- 48	144
25-29	18	-4	- 72	288
20-24	12	-5	- 60	300
15-19	4	-6	- 24-248	144

Mean 44.65

P.E. of Mean #.8003

Median 45.54

M.D. 12.36

P.E. of S.D. # 5657

S.D. 15.14

Table 3.

Test I, Small town or village schools.
311 cases, 30 schools.

Scores	f	d	fd	fd ²
80-84	3	7	21	147
75-79	8	6	48	288
70-74	5	5	25	125
65-69	20	4	80	320
60-64	22	3	66	198
55-59	30	2	60	120
50-54	32	1	(±332) 32	32
45-49	42	0		
40-44	33	-1	- 33	-33
35-39	33	-2	- 66	-132
30-34	24	-3	- 72	-216
25-29	22	-4	- 88	-352
20-24	25	-5	-125	-625
15-19	10	-6	- 60	-360
10-14	2	-7	- 14(-458)	- 98

Mean 45.47

P.E. of Mean #.5989

Median 45.77

M.D. 12.7

P.E. of S.D. # 4233

S.D. 15.65

Table 4.

Test I, Rural schools. 18 cases, 8 schools.

Scores	f	d	fd	fd ²
70-74	1	6	6	36
65-69	1	5	5	25
60-64	0	4	0	0
55-59	1	3	3	9
50-54	2	2	4	8
45-49	3	1	3	3
40-44	2	0	0	0
35-39	3	-1	-3	3
30-34	0	-2	0	0
25-29	2	-3	-6	18
20-24	1	-4	-4	16
15-19	1	-5	-5	25
10-14	1	-6	-6	36

Mean 42.5

P.E. of Mean #2.504

Median 42.5

M.D. 11.67

P.E. of S.D. #1.771

S.D. 15.75

Summary of the results of the experiments

Experiment	Time	Distance	Speed	Acceleration
1	10	100	10	1.0
2	20	200	20	2.0
3	30	300	30	3.0
4	40	400	40	4.0
5	50	500	50	5.0
6	60	600	60	6.0
7	70	700	70	7.0
8	80	800	80	8.0
9	90	900	90	9.0
10	100	1000	100	10.0
11	110	1100	110	11.0
12	120	1200	120	12.0
13	130	1300	130	13.0
14	140	1400	140	14.0
15	150	1500	150	15.0
16	160	1600	160	16.0
17	170	1700	170	17.0
18	180	1800	180	18.0
19	190	1900	190	19.0
20	200	2000	200	20.0

Results of the experiments

Results of the experiments

Results of the experiments

Results of the experiments

Results of the experiments

Results of the experiments

Table 5.

Test I. 1207 cases, 52 schools.

Scores	f	d	fd	fd ²
90-94	4	9	36	324
85-89	6	8	48	384
80-84	21	7	147	1029
75-79	33	6	198	1188
70-74	47	5	235	1175
65-69	84	4	336	1344
60-64	110	3	330	990
55-59	123	2	246	492
50-54	143	1	143	143
45-49	159	0	(±719) 0	0
40-44	113	-1	-113	113
35-39	131	-2	-262	524
30-34	84	-3	-252	756
25-29	78	-4	-312	1248
20-24	49	-5	-245	1225
15-19	18	-6	-108	648
10-14	4	-7	-28 (-1320)	196

Mean 49.15

P.E. of Mean #.3033

Median 48.98

M.D. 12.59

P.E. of S.D. #.2144

S.D. 15.62

Table 1. Summary of data for the first 100 observations.

Obs	Y	X1	X2	X3
1	1.2	0.5	0.1	0.3
2	1.5	0.6	0.2	0.4
3	1.8	0.7	0.3	0.5
4	2.1	0.8	0.4	0.6
5	2.4	0.9	0.5	0.7
6	2.7	1.0	0.6	0.8
7	3.0	1.1	0.7	0.9
8	3.3	1.2	0.8	1.0
9	3.6	1.3	0.9	1.1
10	3.9	1.4	1.0	1.2
11	4.2	1.5	1.1	1.3
12	4.5	1.6	1.2	1.4
13	4.8	1.7	1.3	1.5
14	5.1	1.8	1.4	1.6
15	5.4	1.9	1.5	1.7
16	5.7	2.0	1.6	1.8
17	6.0	2.1	1.7	1.9
18	6.3	2.2	1.8	2.0
19	6.6	2.3	1.9	2.1
20	6.9	2.4	2.0	2.2
21	7.2	2.5	2.1	2.3
22	7.5	2.6	2.2	2.4
23	7.8	2.7	2.3	2.5
24	8.1	2.8	2.4	2.6
25	8.4	2.9	2.5	2.7
26	8.7	3.0	2.6	2.8
27	9.0	3.1	2.7	2.9
28	9.3	3.2	2.8	3.0
29	9.6	3.3	2.9	3.1
30	9.9	3.4	3.0	3.2
31	10.2	3.5	3.1	3.3
32	10.5	3.6	3.2	3.4
33	10.8	3.7	3.3	3.5
34	11.1	3.8	3.4	3.6
35	11.4	3.9	3.5	3.7
36	11.7	4.0	3.6	3.8
37	12.0	4.1	3.7	3.9
38	12.3	4.2	3.8	4.0
39	12.6	4.3	3.9	4.1
40	12.9	4.4	4.0	4.2
41	13.2	4.5	4.1	4.3
42	13.5	4.6	4.2	4.4
43	13.8	4.7	4.3	4.5
44	14.1	4.8	4.4	4.6
45	14.4	4.9	4.5	4.7
46	14.7	5.0	4.6	4.8
47	15.0	5.1	4.7	4.9
48	15.3	5.2	4.8	5.0
49	15.6	5.3	4.9	5.1
50	15.9	5.4	5.0	5.2
51	16.2	5.5	5.1	5.3
52	16.5	5.6	5.2	5.4
53	16.8	5.7	5.3	5.5
54	17.1	5.8	5.4	5.6
55	17.4	5.9	5.5	5.7
56	17.7	6.0	5.6	5.8
57	18.0	6.1	5.7	5.9
58	18.3	6.2	5.8	6.0
59	18.6	6.3	5.9	6.1
60	18.9	6.4	6.0	6.2
61	19.2	6.5	6.1	6.3
62	19.5	6.6	6.2	6.4
63	19.8	6.7	6.3	6.5
64	20.1	6.8	6.4	6.6
65	20.4	6.9	6.5	6.7
66	20.7	7.0	6.6	6.8
67	21.0	7.1	6.7	6.9
68	21.3	7.2	6.8	7.0
69	21.6	7.3	6.9	7.1
70	21.9	7.4	7.0	7.2
71	22.2	7.5	7.1	7.3
72	22.5	7.6	7.2	7.4
73	22.8	7.7	7.3	7.5
74	23.1	7.8	7.4	7.6
75	23.4	7.9	7.5	7.7
76	23.7	8.0	7.6	7.8
77	24.0	8.1	7.7	7.9
78	24.3	8.2	7.8	8.0
79	24.6	8.3	7.9	8.1
80	24.9	8.4	8.0	8.2
81	25.2	8.5	8.1	8.3
82	25.5	8.6	8.2	8.4
83	25.8	8.7	8.3	8.5
84	26.1	8.8	8.4	8.6
85	26.4	8.9	8.5	8.7
86	26.7	9.0	8.6	8.8
87	27.0	9.1	8.7	8.9
88	27.3	9.2	8.8	9.0
89	27.6	9.3	8.9	9.1
90	27.9	9.4	9.0	9.2
91	28.2	9.5	9.1	9.3
92	28.5	9.6	9.2	9.4
93	28.8	9.7	9.3	9.5
94	29.1	9.8	9.4	9.6
95	29.4	9.9	9.5	9.7
96	29.7	10.0	9.6	9.8
97	30.0	10.1	9.7	9.9
98	30.3	10.2	9.8	10.0
99	30.6	10.3	9.9	10.1
100	30.9	10.4	10.0	10.2

Source: Author's calculations.

Notes: See text.

Continued on next page.

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Table 6.

Test II. City Schools. 9 Schools. 657 cases.

Scores	f	d	fd	fd ²
95-99	5	8	40	320
90-94	10	7	70	490
85-89	14	6	84	504
80-84	42	5	210	1050
75-79	39	4	156	624
70-74	58	3	174	522
65-69	48	2	96	192
60-64	81	1	(911) 81	81
55-59	86	0	0	0
50-54	68	-1	-68	68
45-49	51	-2	-102	204
40-44	49	-3	-147	441
35-39	47	-4	-188	752
30-34	32	-5	-160	800
25-29	19	-6	-114	684
20-24	5	-7	-35	245
15-19	3	-8	-24(-838)	192

Mean 58.06

P.E. of Mean #.4348

Median 58.18

M.D. 13.31

P.E. of S.D. #.3074

S.D. 16.52

THE HISTORY OF THE

1700	1701	1702	1703	1704
1705	1706	1707	1708	1709
1710	1711	1712	1713	1714
1715	1716	1717	1718	1719
1720	1721	1722	1723	1724
1725	1726	1727	1728	1729
1730	1731	1732	1733	1734
1735	1736	1737	1738	1739
1740	1741	1742	1743	1744
1745	1746	1747	1748	1749
1750	1751	1752	1753	1754
1755	1756	1757	1758	1759
1760	1761	1762	1763	1764
1765	1766	1767	1768	1769
1770	1771	1772	1773	1774
1775	1776	1777	1778	1779
1780	1781	1782	1783	1784
1785	1786	1787	1788	1789
1790	1791	1792	1793	1794
1795	1796	1797	1798	1799

THE HISTORY OF THE

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Table 7.

Test II, Large town schools. 146 cases, 5 schools.

Scores	f	d	fd	fd ²
85-89	1	8	8	64
80-84	3	7	21	147
75-79	7	6	42	252
70-74	7	5	35	175
65-69	11	4	44	176
60-64	19	3	57	171
55-59	10	2	20	40
50-54	12	1	12	12
45-49	16	-0	(239) 0	0
40-44	24	-1	-24	24
35-39	15	-2	-30	60
30-34	13	-3	-39	117
25-29	4	-4	-16	64
20-24	2	-5	-10	50
15-19	2	-6	-12(-131)	60
Mean	51.2		P.E. of Mean	#.8683
Median	49.06			
M.D.	12.67		P.E. of S.D.	#.6141
S.D.	15.55			

Table 8.

Test II. Small town and village schools,
30 schools, 279 cases.

Scores	f	d	fd	fd ²
85-89	2	7	14	98
80-84	1	6	6	36
75-79	10	5	50	250
70-74	14	4	56	224
65-69	23	3	69	207
60-64	23	2	46	92
55-59	27	1	27	27
50-54	41	0	(268) 0	0
45-49	38	-1	-38	38
40-44	38	-2	-76	152
35-39	23	-3	-69	207
30-34	23	-4	-92	368
25-29	12	-5	-60	300
20-24	3	-6	-18	108
15-19	1	-7	-7(-360)	49
Mean	50.85		P.E. of Mean	#.5614
Median	50.18			
M.D.	11.25		P.E. of S.D.	#.3970
S.D.	13.90			

THE HISTORY OF THE

1781	1782	1783	1784	1785
1786	1787	1788	1789	1790
1791	1792	1793	1794	1795
1796	1797	1798	1799	1800
1801	1802	1803	1804	1805
1806	1807	1808	1809	1810
1811	1812	1813	1814	1815
1816	1817	1818	1819	1820
1821	1822	1823	1824	1825
1826	1827	1828	1829	1830
1831	1832	1833	1834	1835
1836	1837	1838	1839	1840
1841	1842	1843	1844	1845
1846	1847	1848	1849	1850
1851	1852	1853	1854	1855
1856	1857	1858	1859	1860
1861	1862	1863	1864	1865
1866	1867	1868	1869	1870
1871	1872	1873	1874	1875
1876	1877	1878	1879	1880
1881	1882	1883	1884	1885
1886	1887	1888	1889	1890
1891	1892	1893	1894	1895
1896	1897	1898	1899	1900

THE HISTORY OF THE

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THE HISTORY OF THE

Table 9.

Test II. Rural Schools. 7 schools, 16 cases.

Score	f	d	fd	fd ²
75-79	1	5	5	25
70-74	2	4	8	32
65-69	0	3	0	0
60-64	1	2	2	4
55-59	1	1	1	1
50-54	4	0	0	0
45-49	1	-1	-1	1
40-44	1	-2	-2	4
35-39	1	-3	-3	9
30-34	1	-4	-4	16
25-29	0	-5	-0	0
20-24	1	-6	-6	36
15-19	2	-7	-14	98

Mean 48.12

P.E. of Mean # 3.17

Median 51.25

M.D. 14.75

P.E. of S.D. # 2.42

S.D. 18.77

TABLE I			
Year	1900	1901	1902
1	100	100	100
2	100	100	100
3	100	100	100
4	100	100	100
5	100	100	100
6	100	100	100
7	100	100	100
8	100	100	100
9	100	100	100
10	100	100	100
11	100	100	100
12	100	100	100
13	100	100	100
14	100	100	100
15	100	100	100
16	100	100	100
17	100	100	100
18	100	100	100
19	100	100	100
20	100	100	100
21	100	100	100
22	100	100	100
23	100	100	100
24	100	100	100
25	100	100	100
26	100	100	100
27	100	100	100
28	100	100	100
29	100	100	100
30	100	100	100
31	100	100	100
32	100	100	100
33	100	100	100
34	100	100	100
35	100	100	100
36	100	100	100
37	100	100	100
38	100	100	100
39	100	100	100
40	100	100	100
41	100	100	100
42	100	100	100
43	100	100	100
44	100	100	100
45	100	100	100
46	100	100	100
47	100	100	100
48	100	100	100
49	100	100	100
50	100	100	100
51	100	100	100
52	100	100	100
53	100	100	100
54	100	100	100
55	100	100	100
56	100	100	100
57	100	100	100
58	100	100	100
59	100	100	100
60	100	100	100
61	100	100	100
62	100	100	100
63	100	100	100
64	100	100	100
65	100	100	100
66	100	100	100
67	100	100	100
68	100	100	100
69	100	100	100
70	100	100	100
71	100	100	100
72	100	100	100
73	100	100	100
74	100	100	100
75	100	100	100
76	100	100	100
77	100	100	100
78	100	100	100
79	100	100	100
80	100	100	100
81	100	100	100
82	100	100	100
83	100	100	100
84	100	100	100
85	100	100	100
86	100	100	100
87	100	100	100
88	100	100	100
89	100	100	100
90	100	100	100
91	100	100	100
92	100	100	100
93	100	100	100
94	100	100	100
95	100	100	100
96	100	100	100
97	100	100	100
98	100	100	100
99	100	100	100
100	100	100	100

Table 10.

Test II. 1098 cases, 51 schools.

Scores	f	d	fd	fd ²
95-99	5	9	45	405
90-94	10	8	80	640
85-89	17	7	119	833
80-84	46	6	276	1656
75-79	57	5	285	1425
70-74	81	4	324	1296
65-69	82	3	246	738
60-64	124	2	248	496
55-59	124	1	124	124
50-54	125	0	(1647) 0	0
45-49	106	-1	- 106	106
40-44	112	-2	- 224	448
35-39	86	-3	- 258	774
30-34	69	-4	- 276	1104
25-29	35	-5	- 175	875
20-24	11	-6	- 66	396
15-19	8	-7	- 56(-1161)	392
Mean	54.71		P.E. of Mean	#.3323
Median	54.88			
M.D.	12.787		P.E. of S.D.	#.2350
S.D.	16.325			



Table 11.

Test III. City Schools, 9 schools, 621 cases.

Scores	f	d	fd	fd ²
90-94	4	8	32	256
85-89	10	7	70	490
80-84	18	6	108	648
75-79	25	5	125	625
70-74	36	4	144	576
65-69	49	3	147	441
60-64	57	2	114	228
55-59	61	1	61	61
50-54	64	0	1801} 0	0
45-49	75	-1	- 75	75
40-44	60	-2	-120	240
35-39	53	-3	-159	477
30-34	43	-4	-172	688
25-29	30	-5	-150	750
20-24	26	-6	-156	936
15-19	9	-7	- 63	441
10-14	0	-8	0	0
5-9	1	-9	- 9	81

Mean 51.67

P.E. of Mean #.4547

Median 51.05

M.D. 13.73

P.E. of S.D. #.3215

S.D. 16.8

Table 12.

Test III. Large town schools, 5 schools, 137 cases.

Scores	f	d	fd	fd ²
85-89	1	8	8	64
80-84	1	7	7	49
75-79	2	6	12	72
70-74	5	5	25	125
65-69	5	4	20	80
60-64	10	3	30	90
55-59	13	2	26	52
50-54	23	1	23	23
45-49	12	0	(151) 0	0
40-44	9	-1	- 9	9
35-39	20	-2	- 40	80
30-34	12	-3	- 36	108
25-29	10	-4	- 40	160
20-24	9	-5	- 45	225
15-19	4	-6	- 24	144
10-14	1	-7	- 7-01	49
Mean	46.67		P.E. of Mean #.8976	
Median	46.46			
M.D.	12.35		P.E. of S.D. #.6348	
S.D.	15.57			

Table 13.

Test III. Small town and village schools.
259 cases, 30 schools.

Score	f	d	fd	fd ²
80-84	3	8	24	192
75-79	3	7	21	147
70-74	4	6	24	144
65-69	6	5	30	150
60-64	27	4	108	432
55-59	24	3	72	216
50-54	27	2	54	108
45-49	27	1	(360) 27	27
40-44	30	0	0	0
35-39	28	-1	- 28	28
30-24	33	-2	- 66	132
25-29	23	-3	- 69	207
20-24	18	-4	- 72	288
15-19	5	-5	- 25	125
10-14	1	-6	- 6(266)	36
Mean	44.31		P.E. of Mean	#.6154
Median	43.58			
M.D.	12.08		P.E. of S.D.	#.4352
S.D.	14.68			

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23	24	25
26	27	28	29	30
31	32	33	34	35
36	37	38	39	40
41	42	43	44	45
46	47	48	49	50
51	52	53	54	55
56	57	58	59	60
61	62	63	64	65
66	67	68	69	70
71	72	73	74	75
76	77	78	79	80
81	82	83	84	85
86	87	88	89	90
91	92	93	94	95
96	97	98	99	100
101	102	103	104	105
106	107	108	109	110
111	112	113	114	115
116	117	118	119	120
121	122	123	124	125
126	127	128	129	130
131	132	133	134	135
136	137	138	139	140
141	142	143	144	145
146	147	148	149	150
151	152	153	154	155
156	157	158	159	160
161	162	163	164	165
166	167	168	169	170
171	172	173	174	175
176	177	178	179	180
181	182	183	184	185
186	187	188	189	190
191	192	193	194	195
196	197	198	199	200
201	202	203	204	205
206	207	208	209	210
211	212	213	214	215
216	217	218	219	220
221	222	223	224	225
226	227	228	229	230
231	232	233	234	235
236	237	238	239	240
241	242	243	244	245
246	247	248	249	250
251	252	253	254	255
256	257	258	259	260
261	262	263	264	265
266	267	268	269	270
271	272	273	274	275
276	277	278	279	280
281	282	283	284	285
286	287	288	289	290
291	292	293	294	295
296	297	298	299	300
301	302	303	304	305
306	307	308	309	310
311	312	313	314	315
316	317	318	319	320
321	322	323	324	325
326	327	328	329	330
331	332	333	334	335
336	337	338	339	340
341	342	343	344	345
346	347	348	349	350
351	352	353	354	355
356	357	358	359	360
361	362	363	364	365
366	367	368	369	370
371	372	373	374	375
376	377	378	379	380
381	382	383	384	385
386	387	388	389	390
391	392	393	394	395
396	397	398	399	400
401	402	403	404	405
406	407	408	409	410
411	412	413	414	415
416	417	418	419	420
421	422	423	424	425
426	427	428	429	430
431	432	433	434	435
436	437	438	439	440
441	442	443	444	445
446	447	448	449	450
451	452	453	454	455
456	457	458	459	460
461	462	463	464	465
466	467	468	469	470
471	472	473	474	475
476	477	478	479	480
481	482	483	484	485
486	487	488	489	490
491	492	493	494	495
496	497	498	499	500
501	502	503	504	505
506	507	508	509	510
511	512	513	514	515
516	517	518	519	520
521	522	523	524	525
526	527	528	529	530
531	532	533	534	535
536	537	538	539	540
541	542	543	544	545
546	547	548	549	550
551	552	553	554	555
556	557	558	559	560
561	562	563	564	565
566	567	568	569	570
571	572	573	574	575
576	577	578	579	580
581	582	583	584	585
586	587	588	589	590
591	592	593	594	595
596	597	598	599	600
601	602	603	604	605
606	607	608	609	610
611	612	613	614	615
616	617	618	619	620
621	622	623	624	625
626	627	628	629	630
631	632	633	634	635
636	637	638	639	640
641	642	643	644	645
646	647	648	649	650
651	652	653	654	655
656	657	658	659	660
661	662	663	664	665
666	667	668	669	670
671	672	673	674	675
676	677	678	679	680
681	682	683	684	685
686	687	688	689	690
691	692	693	694	695
696	697	698	699	700
701	702	703	704	705
706	707	708	709	710
711	712	713	714	715
716	717	718	719	720
721	722	723	724	725
726	727	728	729	730
731	732	733	734	735
736	737	738	739	740
741	742	743	744	745
746	747	748	749	750
751	752	753	754	755
756	757	758	759	760
761	762	763	764	765
766	767	768	769	770
771	772	773	774	775
776	777	778	779	780
781	782	783	784	785
786	787	788	789	790
791	792	793	794	795
796	797	798	799	800
801	802	803	804	805
806	807	808	809	810
811	812	813	814	815
816	817	818	819	820
821	822	823	824	825
826	827	828	829	830
831	832	833	834	835
836	837	838	839	840
841	842	843	844	845
846	847	848	849	850
851	852	853	854	855
856	857	858	859	860
861	862	863	864	865
866	867	868	869	870
871	872	873	874	875
876	877	878	879	880
881	882	883	884	885
886	887	888	889	890
891	892	893	894	895
896	897	898	899	900
901	902	903	904	905
906	907	908	909	910
911	912	913	914	915
916	917	918	919	920
921	922	923	924	925
926	927	928	929	930
931	932	933	934	935
936	937	938	939	940
941	942	943	944	945
946	947	948	949	950
951	952	953	954	955
956	957	958	959	960
961	962	963	964	965
966	967	968	969	970
971	972	973	974	975
976	977	978	979	980
981	982	983	984	985
986	987	988	989	990
991	992	993	994	995
996	997	998	999	1000

Table 14.

Test III. Rural Schools, 6 schools, 13 cases.

Score	f	d	fd	fd ²
70-74	1	5	5	25
65-69	0	4	0	0
60-64	1	3	3	9
55-59	0	2	0	0
50-54	4	1	4	4
45-49	1	0	(12) 0	0
40-44	1	-1	- 1	1
35-39	1	-2	- 2	4
30-34	1	-3	- 3	9
25-29	0	-4	0	0
20-25	2	-5	-10	50
15-19	1	-6	- 6	(138) 36

Mean 43.66

P.E. of Mean #3.054

Median 42.5

M.D. 13.08

P.E. of S.D. #2.17

S.D. 16.3



Table 15.

Test III. 51 schools, 1030 cases.

Scores	f	d	fd	fd ²
90-94	4	9	36	324
85-89	11	8	88	704
80-84	22	7	154	1078
75-79	30	6	180	1080
70-74	46-	5	230	1150
65-69	60	4	240	960
60-64	95	3	285	855
55-59	98	2	196	392
50-54	118	1	118	118
45-49	115	0	(1527) 0	0
40-44	100	-1	-100	100
35-39	102	-2	-204	408
30-34	89	-3	-267	801
25-29	63	-4	-252	1008
20-24	56	-5	-275	1375
15-19	19	-6	-114	684
10-14	2	-7	- 14	98
5-9	1	-8	- 8(1234)	64
Mean	48.92		P.E. of Mean #.	.3478
Median	48.65			
M.D.	13.40		P.E. of S.D. #.	.2459
S.D.	16.55			

Table 16.

Complete test, parts I, II, and III. 3335 cases.

Scores	f	d	fd	fd ²
95-99	5	9	45	405
90-94	18	8	144	1152
85-89	34	7	238	1666
80-84	89	6	534	3204
75-79	120	5	600	3000
70-74	174	4	696	2784
65-69	226	3	678	2034
60-64	329	2	658	1316
55-59	345	1	345	345
50-54	386	0	(3938) 0	0
45-49	380	-1	-380	380
40-44	325	-2	-650	1300
35-39	319	-3	-957	2871
30-34	242	-4	-968	3872
25-29	176	-5	-880	4440
20-24	115	-6	-690	4140
15-19	45	-7	-315	2205
10-14	6	-8	- 48	384
5-9	1	-9	- 9(4897)	81
Mean	51.66		P.E. of Mean	#.1903
Median	51.77			
M.D.	13.24		P.E. of S.D.	#.1338
S.D.	16.3			

Table 17.

Comparison of four types of schools in
the combined test, percentage of pupils
making each score.

Score	City	Large town	Small town and Village	Rural
	percent	percent	percent	percent
95-99	.25	0	0	0
90-94	.9	0	0	0
85-89	1.5	.44	.24	0
80-84	3.85	1.1	.83	0
75-79	4.3	2.64	2.49	2.13
70-74	6.5	3.74	2.72	8.52
65-69	7.6	4.64	5.8	2.13
60-64	10.9	8.14	8.3	4.26
55-59	11	9.24	9.6	4.26
50-54	11.1	11.88	11.8	21.35
45-40	10.85	11.22	12.8	10.65
40-44	8.65	10.34	12	8.52
35-39	9	11	10	10.65
30-34	5.95	8.9	9.44	4.26
25-29	4.2	7.04	6.7	4.26
20-24	2.1	5.06	5.5	8.52
15-19	.75	2.2	1.9	8.52
10-15	.05	.22	.36	2.13
5-9	.05	—	—	—

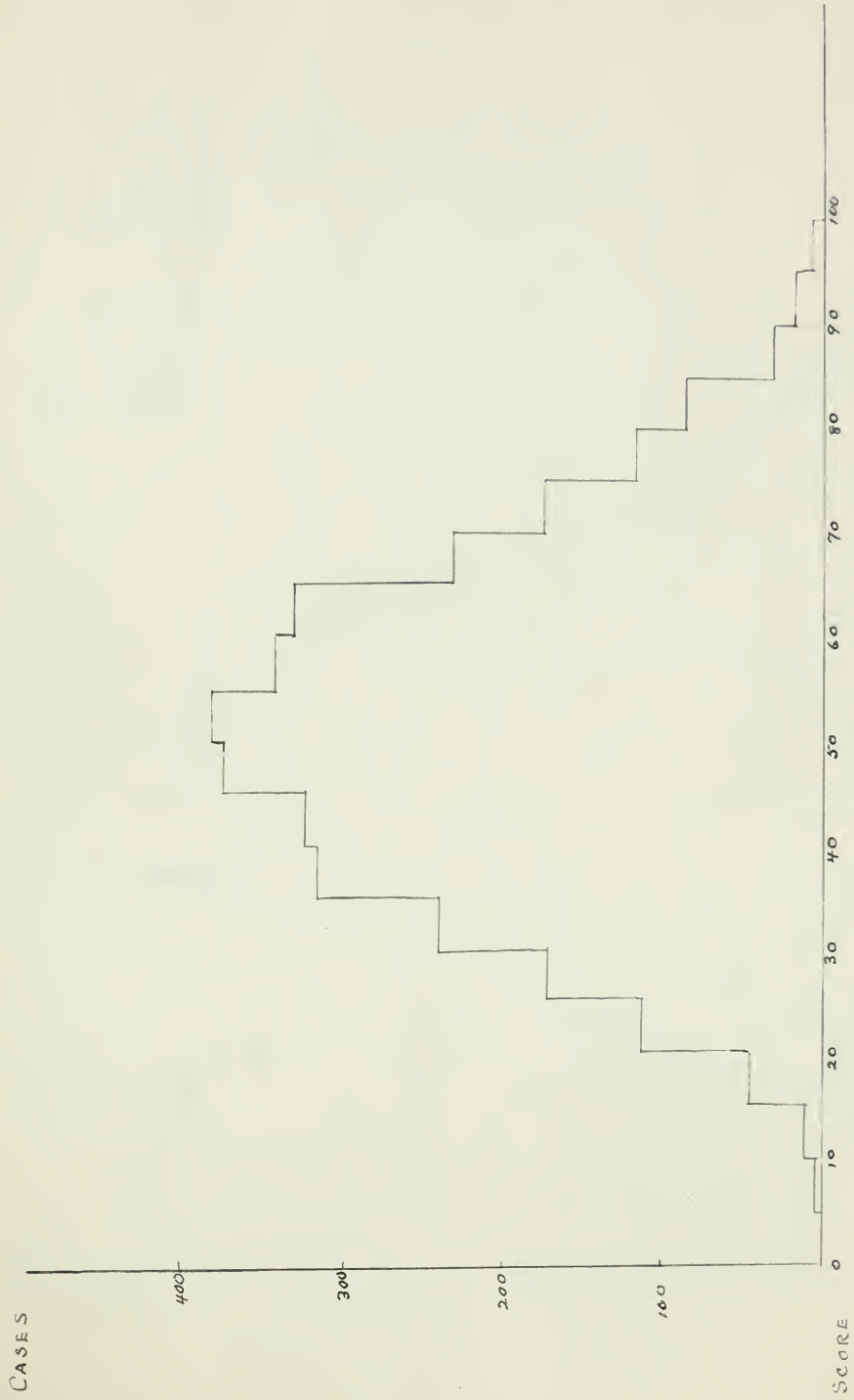
TABLE NO. 100. *Continued* SUMMARY OF THE *1905* *...* ... *...* ...

Year	...	...		...
		...	...	
1900	...	...	...	...
1901	...	...	...	...
1902	...	...	...	...
1903	...	...	...	...
1904	...	...	...	...
1905	...	...	...	...
1906	...	...	...	...
1907	...	...	...	...
1908	...	...	...	...
1909	...	...	...	...
1910	...	...	...	...
1911	...	...	...	...
1912	...	...	...	...
1913	...	...	...	...
1914	...	...	...	...
1915	...	...	...	...
1916	...	...	...	...
1917	...	...	...	...
1918	...	...	...	...
1919	...	...	...	...
1920	...	...	...	...
1921	...	...	...	...
1922	...	...	...	...
1923	...	...	...	...
1924	...	...	...	...
1925	...	...	...	...
1926	...	...	...	...
1927	...	...	...	...
1928	...	...	...	...
1929	...	...	...	...
1930	...	...	...	...
1931	...	...	...	...
1932	...	...	...	...
1933	...	...	...	...
1934	...	...	...	...
1935	...	...	...	...
1936	...	...	...	...
1937	...	...	...	...
1938	...	...	...	...
1939	...	...	...	...
1940	...	...	...	...
1941	...	...	...	...
1942	...	...	...	...
1943	...	...	...	...
1944	...	...	...	...
1945	...	...	...	...
1946	...	...	...	...
1947	...	...	...	...
1948	...	...	...	...
1949	...	...	...	...
1950	...	...	...	...
1951	...	...	...	...
1952	...	...	...	...
1953	...	...	...	...
1954	...	...	...	...
1955	...	...	...	...
1956	...	...	...	...
1957	...	...	...	...
1958	...	...	...	...
1959	...	...	...	...
1960	...	...	...	...
1961	...	...	...	...
1962	...	...	...	...
1963	...	...	...	...
1964	...	...	...	...
1965	...	...	...	...
1966	...	...	...	...
1967	...	...	...	...
1968	...	...	...	...
1969	...	...	...	...
1970	...	...	...	...
1971	...	...	...	...
1972	...	...	...	...
1973	...	...	...	...
1974	...	...	...	...
1975	...	...	...	...
1976	...	...	...	...
1977	...	...	...	...
1978	...	...	...	...
1979	...	...	...	...
1980	...	...	...	...
1981	...	...	...	...
1982	...	...	...	...
1983	...	...	...	...
1984	...	...	...	...
1985	...	...	...	...
1986	...	...	...	...
1987	...	...	...	...
1988	...	...	...	...
1989	...	...	...	...
1990	...	...	...	...
1991	...	...	...	...
1992	...	...	...	...
1993	...	...	...	...
1994	...	...	...	...
1995	...	...	...	...
1996	...	...	...	...
1997	...	...	...	...
1998	...	...	...	...
1999	...	...	...	...
2000	...	...	...	...

Table 18.

Comparison of four types of schools.

	City		Large Town		Small Town		Rural		Total	
	Cases	Mean	Cases	Mean	Cases	Mean	Cases	Mean	Cases	Mean
Part I	715	52	163	44.7	311	45.5	18	42.5	1207	49.
Part II	657	58.1	146	51.2	279	50.9	16	48.1	1098	54.7
Part III	621	51.7	137	46.7	259	44.3	13	43.7	1030	48.9
Whole Test	1993	54.01	446	47.44	849	46.9	47	44.74	3335	51.66

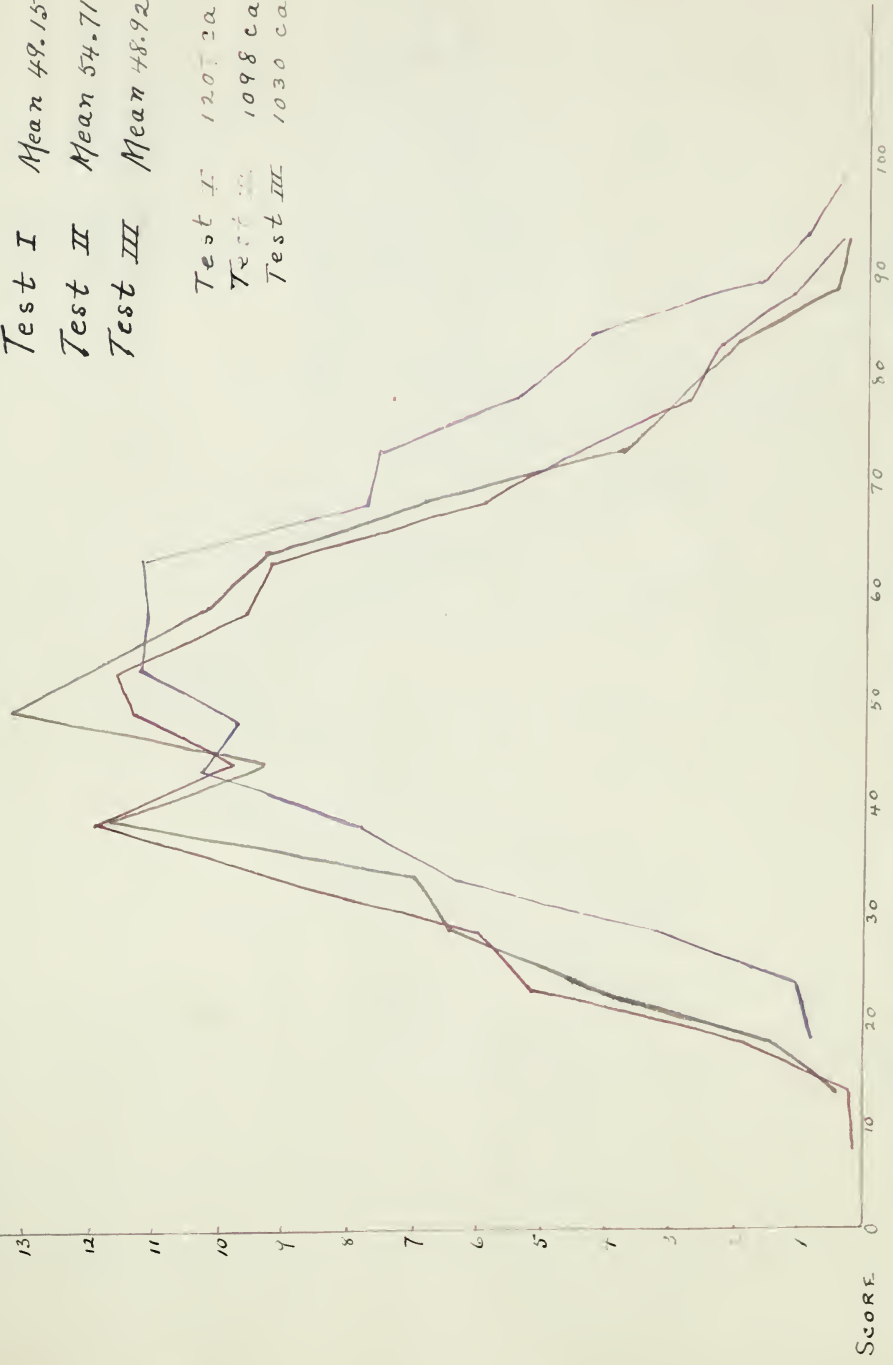


GRAPH 1. Frequency surface showing scores made by 3335 cases (1112 students) in complete test.

Percent
of
Cases

Test I Mean 49.15
 Test II Mean 54.71
 Test III Mean 48.92

Test I 1207 cases
 Test II 1098 cases
 Test III 1030 cases



GRAPH 2 Frequency surfaces showing scores made by all subjects in Parts I, II and III

Percent
of
Cases

11

15

14

13

12

11

10

9

8

7

6

5

4

3

2

1

0

Score

10

20

30

40

50

60

70

80

90

100

Type Mean

City

54.01

Large Town

47.44

Small Town

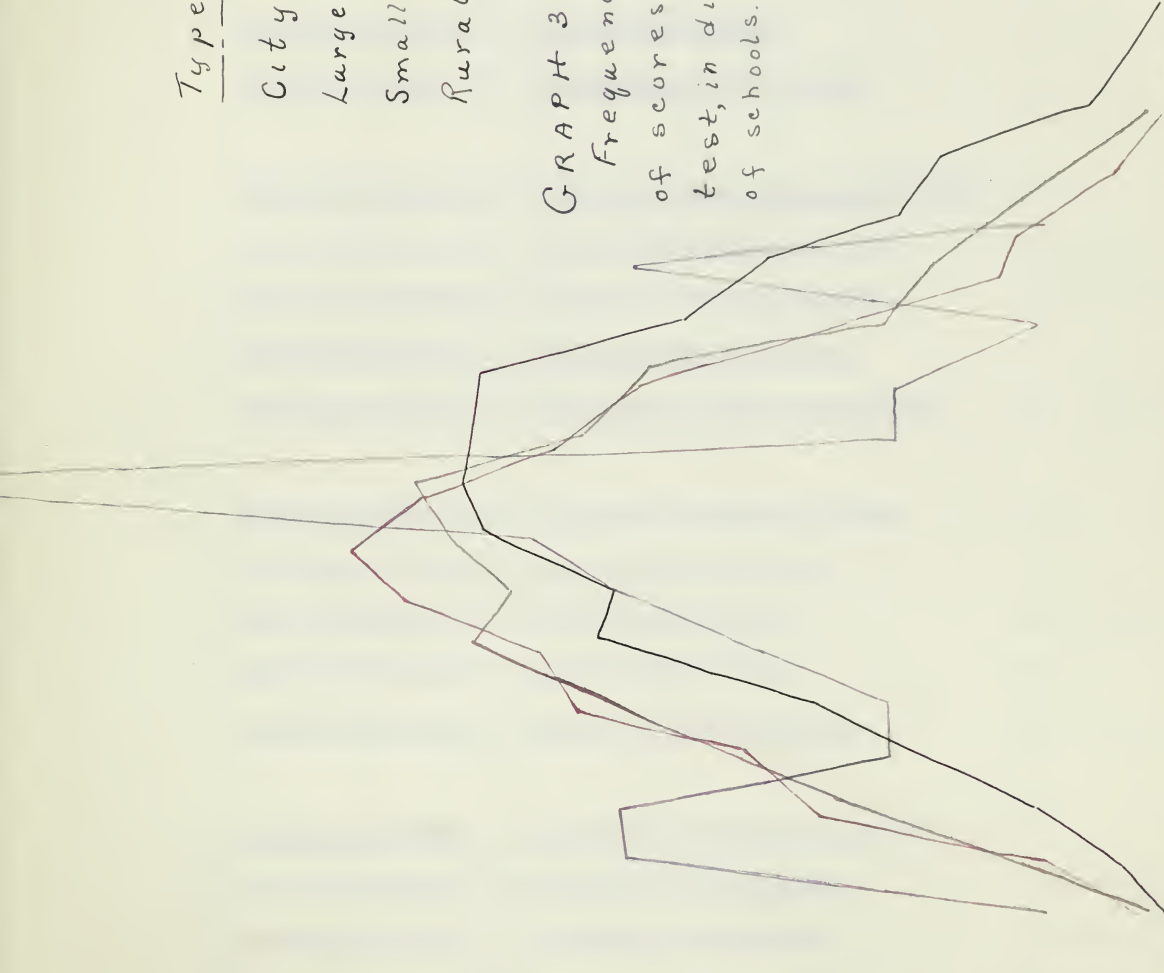
46.9

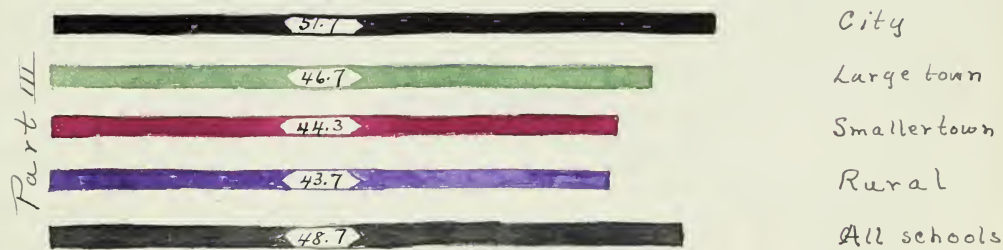
Rural Town

44.74

GRAPH 3

Frequency distribution
of scores in complete
test, in different types
of schools.

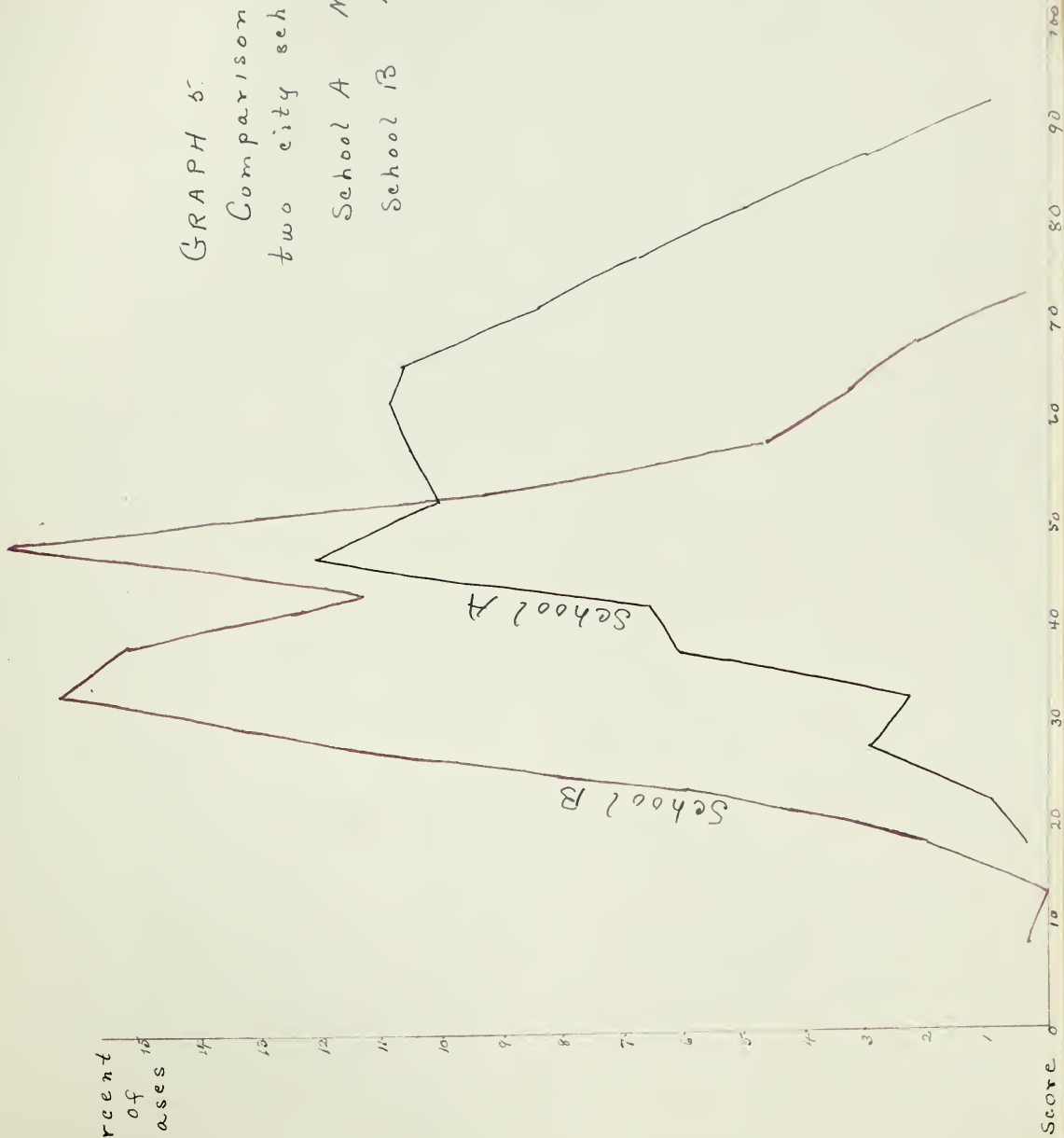




GRAPH 4. Means in Parts I, II and III, and the complete test, in the four types of schools

Percent
of
Cases

Score



GRAPH 5:

Comparison of scores in
two city schools

School A Mean 58.2

School B Mean 38.1

B29738